

AMENDMENTS TO THE CLAIMS

1-6. (Canceled)

7. (Currently Amended) A method of simultaneously transmitting data having the same or different priority levels to a mobile station in a mobile communication system, comprising the steps of:

classifying transmission data streams by priority level and separating each transmission data stream into data streams of predetermined lengths according to characteristics of the data streams;

segmenting the separated data streams according to a data rate;

encoding the segmented data on a plurality of multiple quality control (MQC) channels at a predetermined code rate, repeating code symbol sequences with higher priority levels, and puncturing code symbol sequences with lower priority levels, the number of repeated code symbols being equal to the number of punctured code symbols; and

serially concatenating the repeated and punctured code symbol sequences,

wherein each of the MQC channels comprises:

a channel encoder for encoding the segmented data at the predetermined code rate; and

a quality matcher (QM) for repeating the code symbol sequences with the higher priority levels and puncturing the code symbol sequences with the lower priority levels.

8. (Original) The method of claim 7, wherein if the transmission data stream is an intra-media stream, the transmission data stream is separated into at least two data streams by priority level.

9. (Original) The method of claim 7, wherein the code symbol sequences are distinguishably generated in data blocks of the size determined according to a characteristic of each stream and an available data rate transmittable on a radio channel.

10. (Original) The method of claim 9, wherein if the data blocks are shorter than lengths provided by the data rate, redundancy is added to the data blocks.

11. (Original) The method of claim 10, wherein the redundancy-added data blocks are repeated or punctured including the redundancy .

12. (Currently Amended) An apparatus for simultaneously transmitting data with the same or different priority levels in a mobile communication system, comprising:

a radio link protocol (RLP) portion for classifying transmission data streams by priority level and separating each transmission data stream into data streams of predetermined lengths according to characteristics and a data rate of the data streams;

a multiplexer (MUX) for segmenting the separated data streams according to the data rate;

a plurality of multiple quality control (MQC) channels for encoding the segmented data at a predetermined code rate, repeating code symbol sequences with higher priority levels, and puncturing code symbol sequences with lower priority levels, the number of repeated code symbols being equal to the number of punctured code symbols; and

a serial concatenator for serially concatenating the repeated and punctured code symbol sequences,

wherein each of the MQC channels comprises:

a channel encoder for encoding the segmented data at the predetermined code rate; and

a quality matcher (QM) for repeating the code symbol sequences with the higher priority levels and puncturing the code symbol sequences with the lower priority levels.

13. (Canceled)

14. (Currently Amended) The apparatus of claim ~~[[13]]~~ 14, wherein the code symbol sequences are generated in data blocks of lengths determined according to a characteristic of each code symbol sequence and an available data rate on a radio channel.

15. (Original) The apparatus of claim 14, further comprising a redundancy selector in each MQC channel, for adding redundancy to the data blocks if the data blocks are shorter than lengths provided by the data rate.

16. (Currently Amended) The apparatus of claim ~~[[13]]~~ 14, wherein the channel encoders are turbo encoders.

17. (Previously Presented) The apparatus of claim 12, further comprising a data rate control unit for determining the data rate based on the data rate information received from a mobile station and then providing the determined data rate with the radio link protocol.